CLAIMS

What is claimed is:

1. A sealing system for sealing a machine element, preferably a shaft, comprising at least one sealing ring and a depot for absorbing a leak, said system being monitored with a measuring device, wherein the measuring device includes a condenser and the depot serves as a dielectric.

2. The sealing system according to Claim 1, wherein the condenser includes condenser plates formed of electrically conductive support rings by two mounted sealing rings.

3. The sealing system according to Claim 1, wherein the condenser includes condenser plates formed of electrically conductive covering layers on two circular sides of the depot.

4. The sealing system according to Claim 3, wherein the covering layers are distributed over the depot in segments, said segments connected to each other conductively or nonconductively.

5. The sealing system according to Claim 1, wherein the depot is formed of an absorbent and/or swellable circular disk.

6. The sealing system according to Claim 1, wherein the depot comprises a porous material.

7. The sealing system according to Claim 1, wherein the depot comprises an absorbent and/or swellable polymer.

8. The sealing system according to Claim 1, wherein the depot is comprises a nonwoven fabric.

9. The sealing system according to Claim 1, wherein the sealing system further comprises a temperature sensor.

10. A method for measuring the quantity of leaked material for a sealing system according to Claim 1, wherein a change in dielectric properties of the depot represents a measure of saturation of said depot with a leaked material, said change being determined by measuring the condenser capacity.

11. A method for measuring the quantity of leaked material for a sealing system according to Claim 1, wherein a change in dielectric properties of the depot is determined by dielectric spectroscopy.

12. A leak detection system comprising:

a first sealing ring and a second sealing ring, said first and second sealing rings including a condenser plate;

a depot disposed between said first and second sealing rings acting as a dielectric; and

a temperature measuring element;

wherein said depot absorbs a leaking material and said leaking material absorbed by said depot changes a dielectric property of said depot that is measured by said condenser plates.

13. The leak detection system according to claim 12, wherein said depot comprises a porous material.

14. The leak detection system according to claim 12, wherein said change in dielectric property of the depot is measured by the condenser plates by a change in the capacity of the condenser plates.

15. The leak detection system according to claim 12, wherein said condenser plates comprise electrically conductive covering layers disposed on a plurality of sides of the depot.

16. The leak detection system according to claim 12, wherein the temperature measuring element determines a temperature of the leaked material and compensates an effect of the temperature on a result of the measurement.